BEEF PROTEIN & THE ENVIRONMENT

A DISAPPEARING ECOSYSTEM?

LESS THAN 20% OF CANADIAN GRASSLANDS REMAIN INTACT[1] BECAUSE THEY HAVE BEEN CONVERTED TO CROPLAND, OR DEVELOPED FOR CITIES OR INDUSTRIAL PURPOSES.

The Great Plains are temperate grasslands located in the southern portion of the Canadian prairie provinces and the central United States. Grasslands are among the most endangered ecosystems in the world.

Nearly 1/3 of Canada's agricultural land is used for beef production.[2] This consists mostly of **native prairie** (land that has never been worked) and **tame grasses** (land that has been cropped and converted back to pasture) grown on land which is typically unsuitable for crop farming but are ideal for grazing cattle. A small amount of farm land is also used for growing grains for cattle feed.

Cattle to the Rescue!

CATTLE HELP PROTECT 68% OF THE WILDLIFE HABITAT CAPACITY OF ALL AGRICULTURAL LAND. MANY BIRD SPECIES WOULD LOSE THEIR HABITAT TO OVERGROWTH WITHOUT CATTLE GRAZING.[3]

GRASSLANDS:

- Support **biodiversity** (the wide variety of life found in an ecosystem) by being home for a wide variety of plants, mammals and insects. More than 60 Canadian **species at risk** (plants and animals that are at risk of becoming extinct) depend on this declining habitat.[4]
- Play a critical role in the water cycle, contributing to ground water reserves, rivers and streams, holding water during floods and providing clean drinking water for human and wildlife communities.
- Contain wetlands, lakes, rivers and valleys that support fish, waterfowl and migratory birds.
- Are important for long-term carbon storage and reducing greenhouse gases (GHGs) from CO_2. Grazing lands store about 1.5 billion tonnes of carbon (equivalent to emissions from 3.62 million cars annually)[5] that would otherwise be released into the atmosphere.

RAISING CATTLE MORE EFFICIENTLY

Intensive livestock operations focus on raising, feeding and/or breeding a large number of animals in a defined space.

Feedlots are a type of intensive livestock operation that specialize in preparing beef cattle to be sold as meat products through a process called **finishing**. From the pasture, beef cattle usually go to a feedlot where they are fed a high-energy diet including grains for about 60 to 200 days.[6]

COMPARING BEEF PRODUCTION IN 2011 TO 1981, 1 KG OF CANADIAN BEEF REQUIRES 17% LESS WATER, 24% LESS LAND AND PRODUCES 15% LESS GREENHOUSE GAS (GHG) EMISSIONS, ALL WHILE PRODUCING 32% MORE BEEF.[7]

GRASSLANDS DEPEND ON CATTLE

- Cattle grazing promotes plant diversity by removing dominant grasses, allowing other species access to light for growth.
- Cattle help reduce fire risk by consuming and reducing dry grass.
- Beef cattle manure provides a valuable source of fertilizer for plants, contributing organic matter and nutrients to soil.

RUMINANTS HAVE SPECIAL TALENTS!

The two major requirements for growth – energy and protein—can be harvested from grasslands much more efficiently by ruminants than any other animals (including humans).[8]

Cattle, like goats and sheep, are **ruminants** that get their nutrients from **forages**, such as grass and alfalfa. These are fibrous feeds that humans cannot digest. Ruminants have special four-compartment stomachs containing special **microbes** (bacteria) that break down feed particles which are later digested and absorbed by the animal. Ruminants also have an advantage over humans and animals with one stomach in that these microbes can take **nonprotein nitrogen** and convert it to protein the animal can use.

Tools of the trade[9]

Growth promotants are among the many sophisticated tools used by feedlots and farmers to raise beef more efficiently, requiring less feed and water, while maintaining high standards of animal health, meat quality and food safety. Examples:

- **Ionophores** improve feed efficiency and weight gain by selectively preventing non-beneficial bacteria and allowing beneficial rumen bacteria to make more feed energy available to the animal.
- **Hormones** help cattle grow more protein and less fat, which improves both weight gain and the ability to convert feed to muscle. The use of hormones is safe and regulated, resulting in products that contains significantly fewer hormones than many common foods, e.g., cabbage or soybean oil.[10]